CPWG /23

FREE ROUTE AIRSPACE

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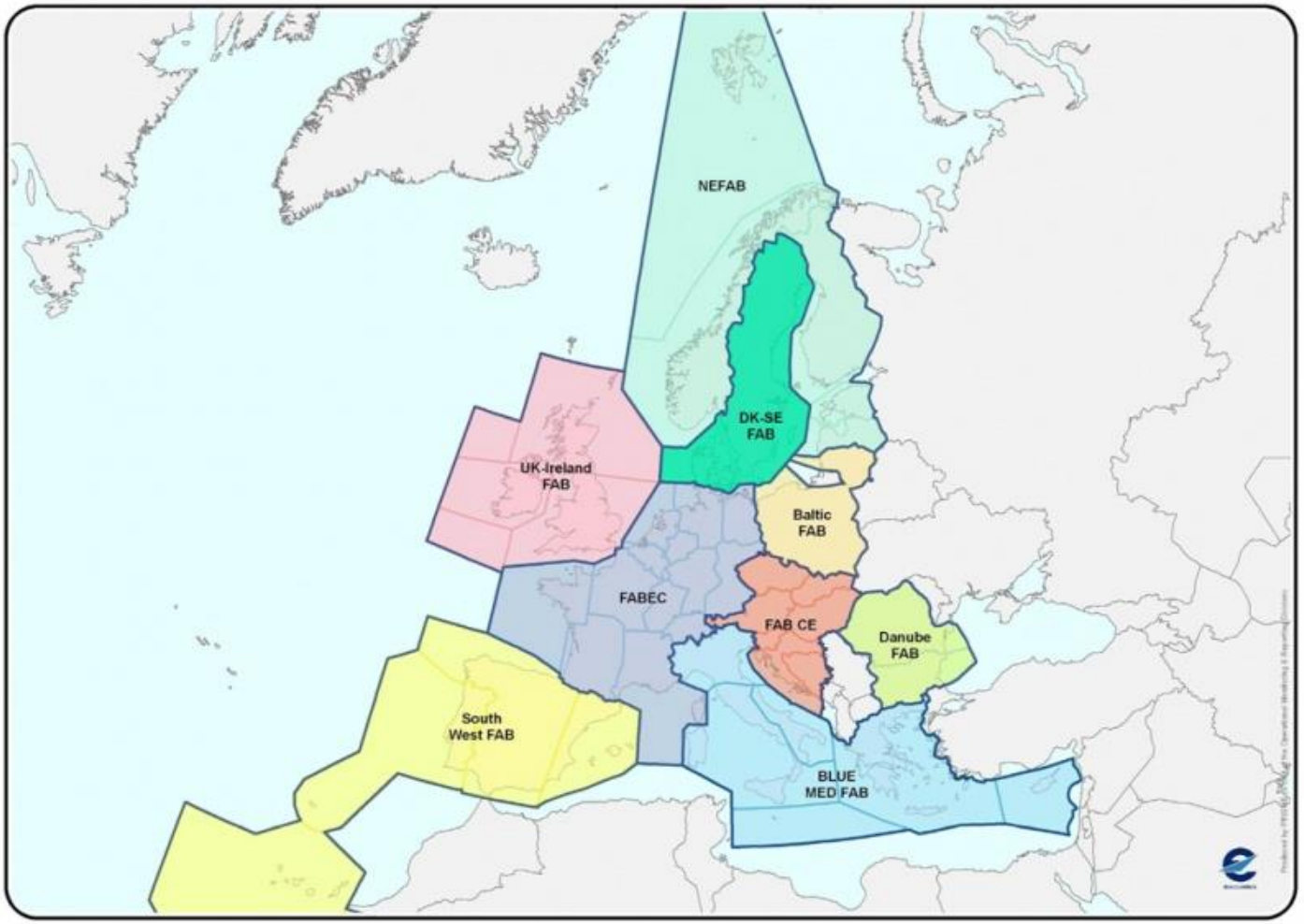
AVINOR

NEFAB – NEFRA – Borealis FRA…..

- *A **Functional Airspace Block** (FAB) is defined in the Single European Sky (SES) legislative package, as an airspace block based on operational requirements and established regardless of State boundaries, where the provision of air navigation services and related functions is performance-driven and optimised through enhanced cooperation among air navigation service providers or, when appropriate, an integrated provider.*
- ***NEFAB** – North European Functional Airspace Block (State level agreement); Estonia, Finland, Latvia, Norway (ANSPs: EANS, Finavia, LGS, Avinor).*
- ***NEFRA** – North European Free Route Airspace (based on State level cooperation declaration); Inter-FAB programme to implement cross-border FRA between DK/SE FAB and NEFAB.*
- ***Borealis Alliance** – (ANSP alliance; Avinor, EANS, Finavia, IAA, Isavia, LFV, LGS, NATS, Naviair.*
- ***Borealis FRA programme**; to implement FRA across northern Europe, stretching from the eastern part of the North Atlantic to the western boundary of Russian airspace.*

Functional Airspace Blocks



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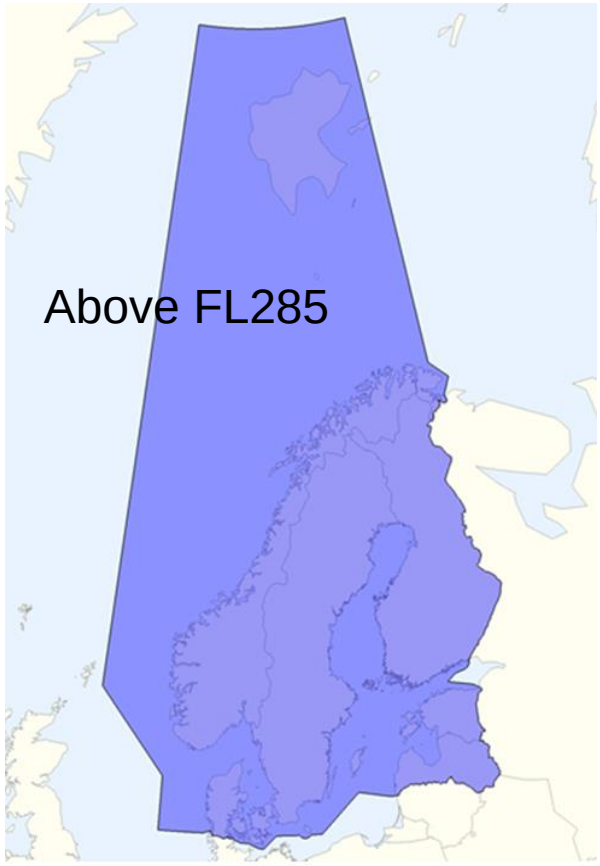
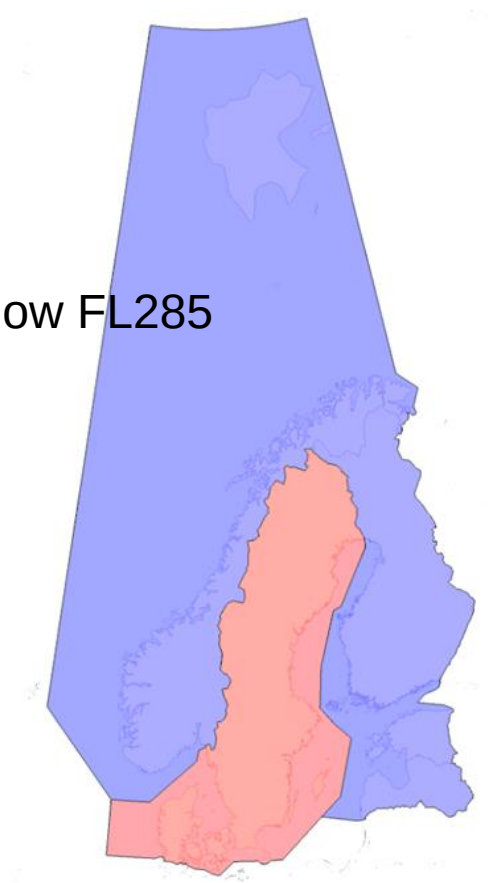
NEFRA

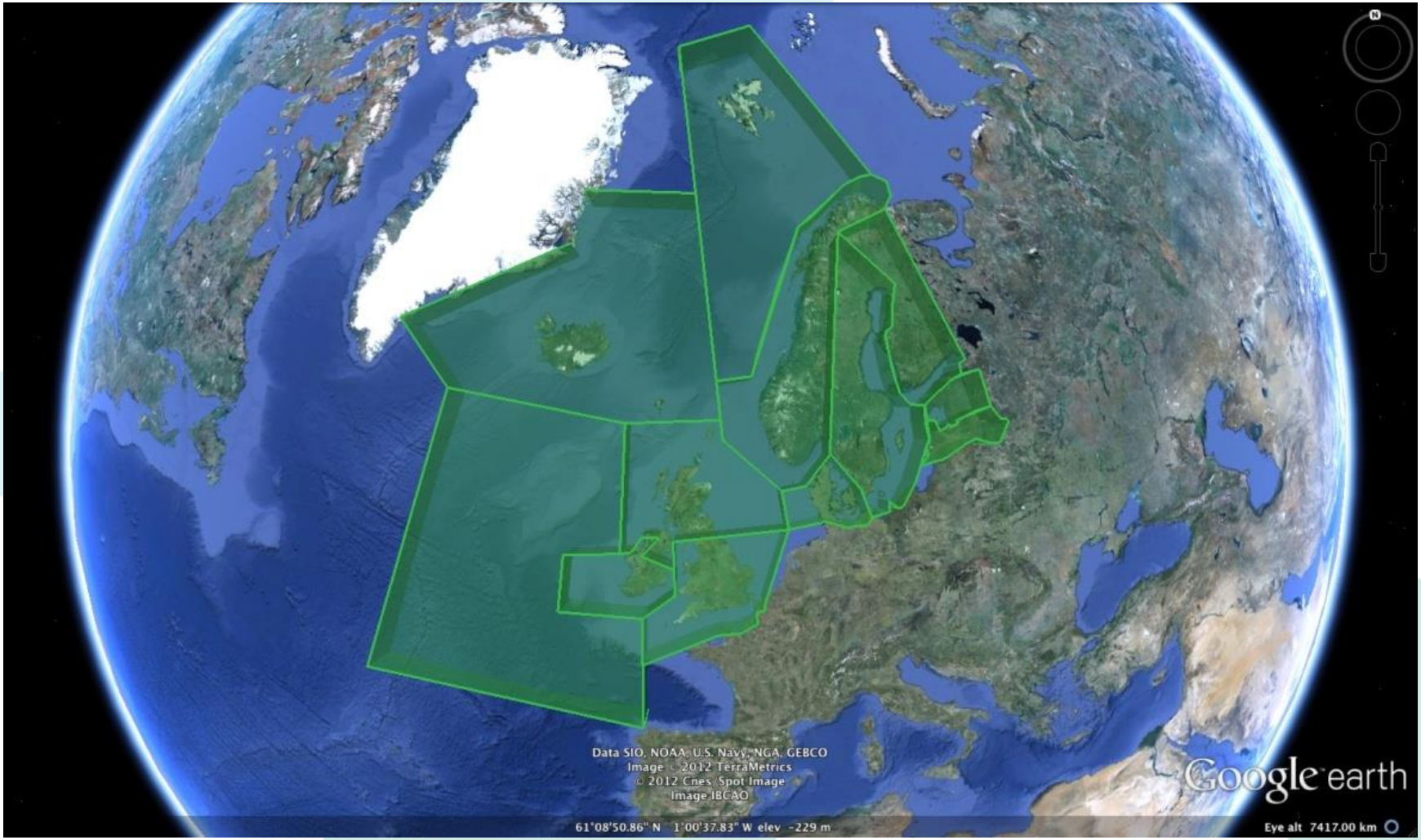
Free Route Airspace

Fixed Route Network





Borealis Alliance



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What is FRA and why?

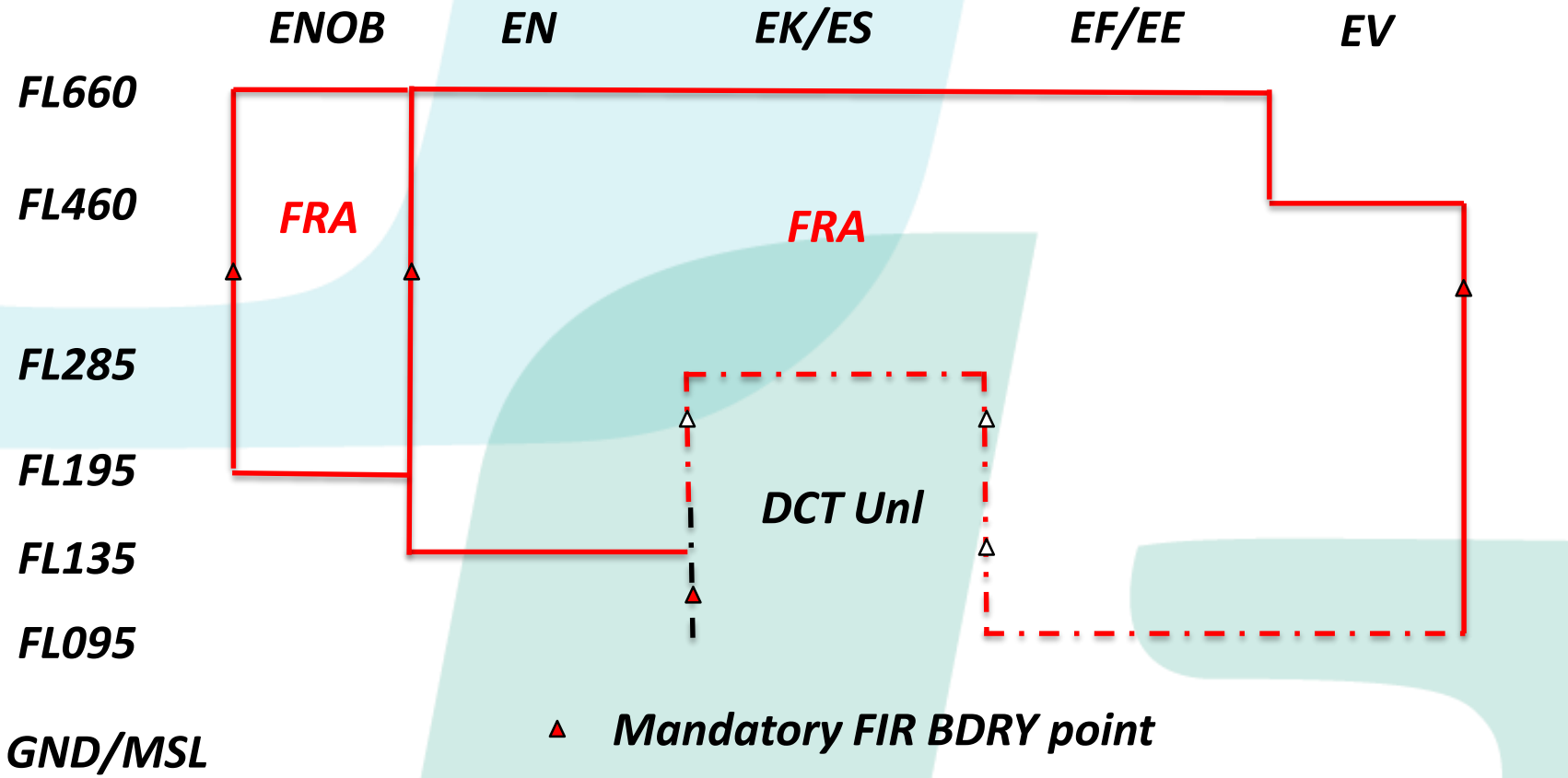
- ***A specified airspace within which users may freely plan a route between a defined entry point and a defined exit point, with the possibility to route via intermediate (published or unpublished) way points, without reference to the ATS route network, subject to airspace availability. Within this airspace, flights remain subject to air traffic control.***

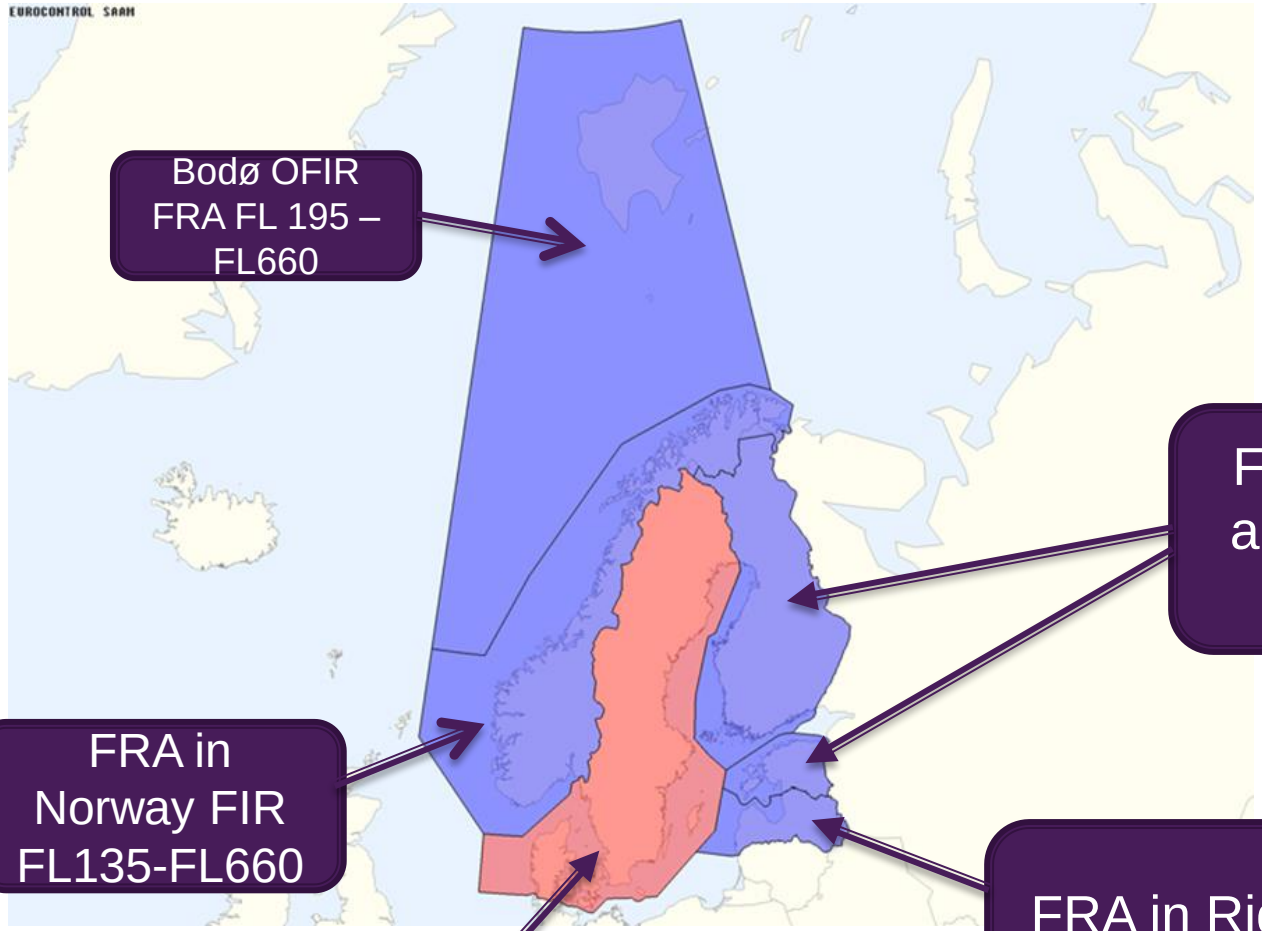
- ***FRA is key to the delivery of fuel efficient, cost efficient and environmentally friendly user preferred routings. FRA is one of the top priorities for airspace users within Europe and will mark a major step towards the Single European Sky (SES).***

- ***The larger the FRA area – the larger the benefits.***

- ***Cross-border FRA contributes to a seamless ATM environment, eliminating requirements for flight planning via mandatory boundary points.***

Common FRA Area UNL DCT FL285-660 (460) from 25th May 2017





Bodø OFIR
FRA FL 195 – FL660

FRA in Finland and Tallinn FIR
FL95-FL660

FRA in Norway FIR
FL135-FL660

FRA in Riga FIR
FL95-FL460

FRA in København and Sweden FIR
FL285-FL660

NEFRA Concept

- ***Seamless integration*** *of two separate FRA volumes (DK/SE FAB - NEFAB)*
- *Enable* ***users preferred trajectories*** *in a large area regardless of FIR borders*
- ***ATS-route network maintained*** *until further*
- *Users will be able to flight plan their preferred trajectories based on* ***common NEFRA flight planning rules***
- ***Sectors have been adapted to accommodate the changes in traffic flows*** *where needed*
- ***The military airspace structures re-designed where needed*** *to accommodate FRA traffic flows and military user requirements.*
- *ATM-systems to fulfill basic* ***NEFRA tech requirements***

Flight planning rules in Free Route Airspace

- ***If the planned trajectory takes the flight into the Free Route Airspace the flight is eligible for user preferred routing.***

- ***In user preferred routing, the route may contain significant points, NAV aids or lat/longs and DCT between these points.***

- ***Special conditions apply when arriving and departing to/from an aerodrome.***

- ***The FRA relevance of the significant points are published in AIP ENR 4.1 and 4.4:***
  - ***(E), for "FRA Horizontal Entry Point"***
  - ***(X), for "FRA Horizontal Exit Point"***
  - ***(I), for "FRA Intermediate Point"***
  - ***(A), for "FRA Arrival Connecting Point"***
  - ***(D), for "FRA Departure Connecting Point"***

**** Combinations of letters can be used for a significant point, e.g.: (EX)***

FRA Horizontal entry/exit

When entering and exiting the FRA area from/to an adjacent airspace, it is mandatory to insert a FRA Horizontal Entry Point and a FRA Horizontal Exit Point.
Cross border DCT between the participating FIR's is allowed for eligible flights (no point on the FIR boundary is required).

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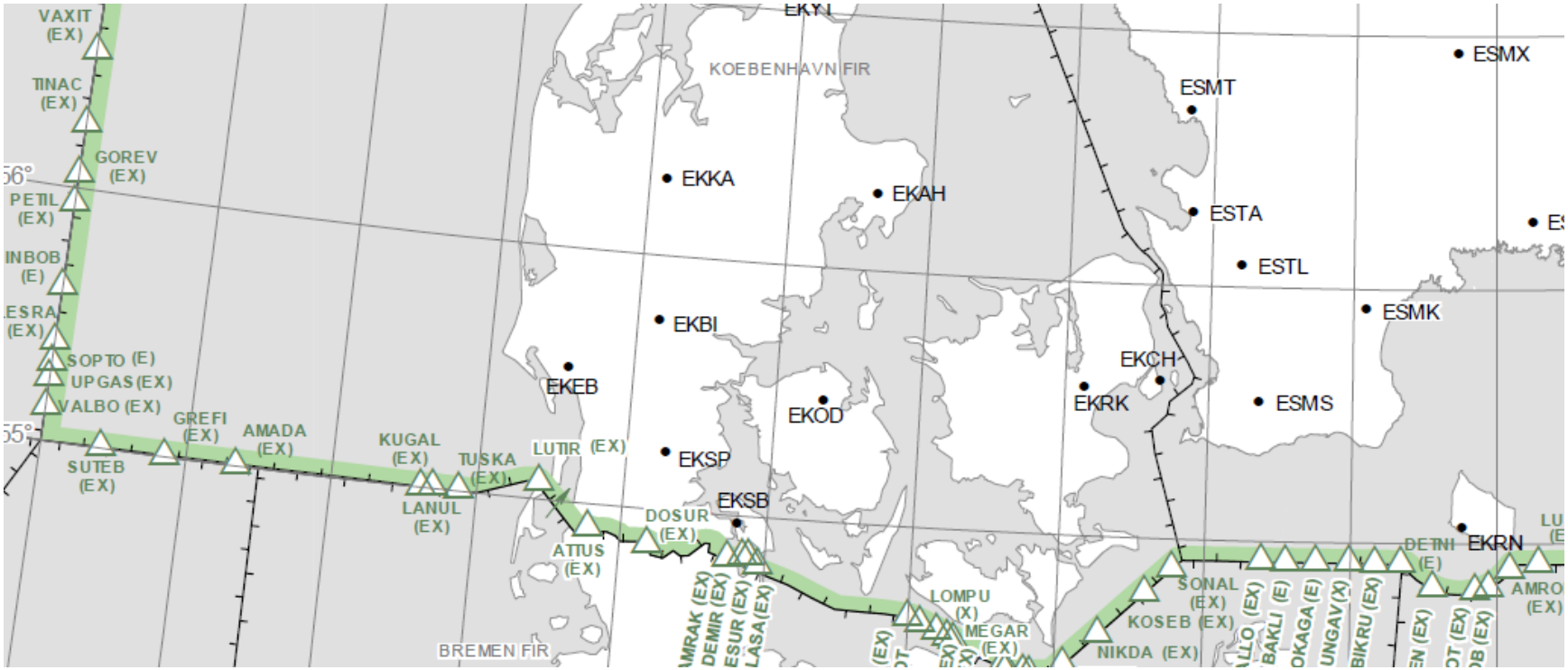
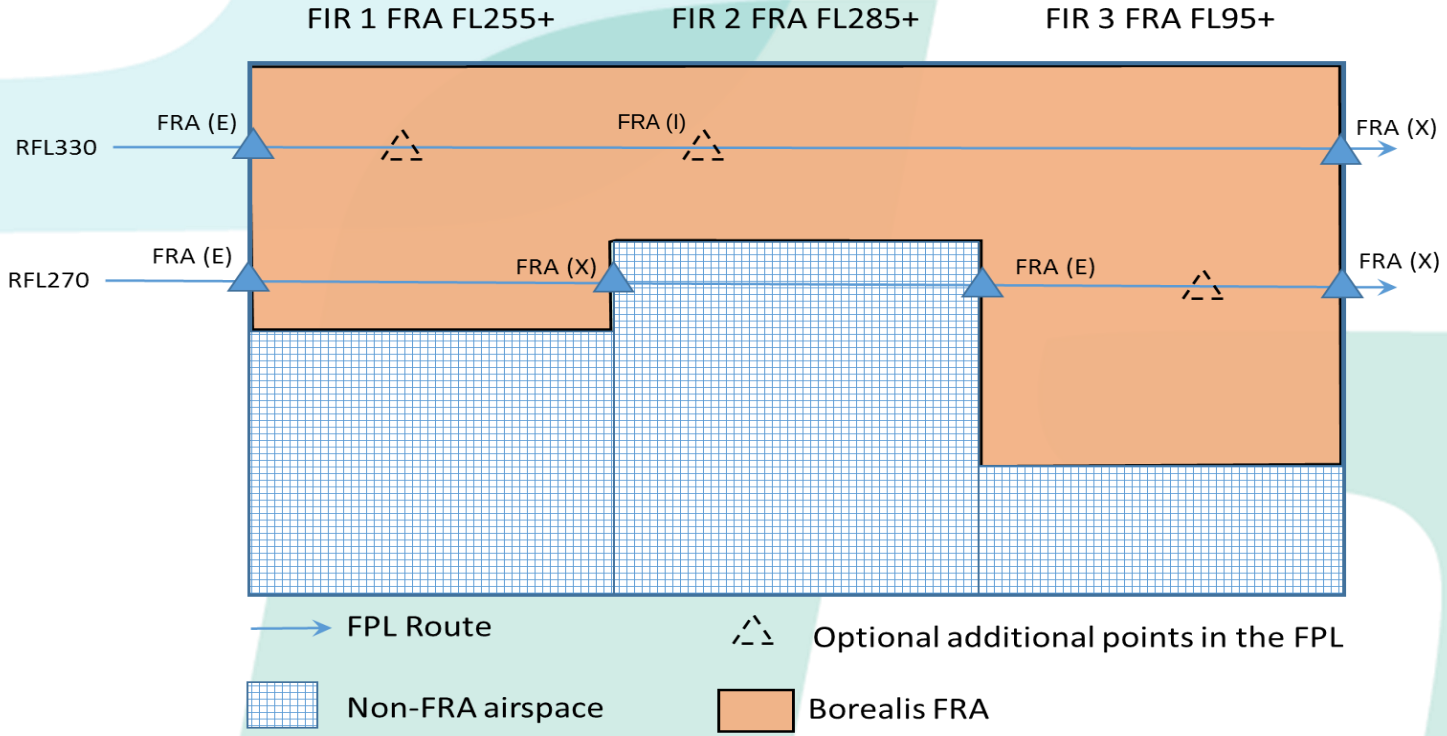
FRA Horizontal entry/exit points



How to flight plan

Overflights:

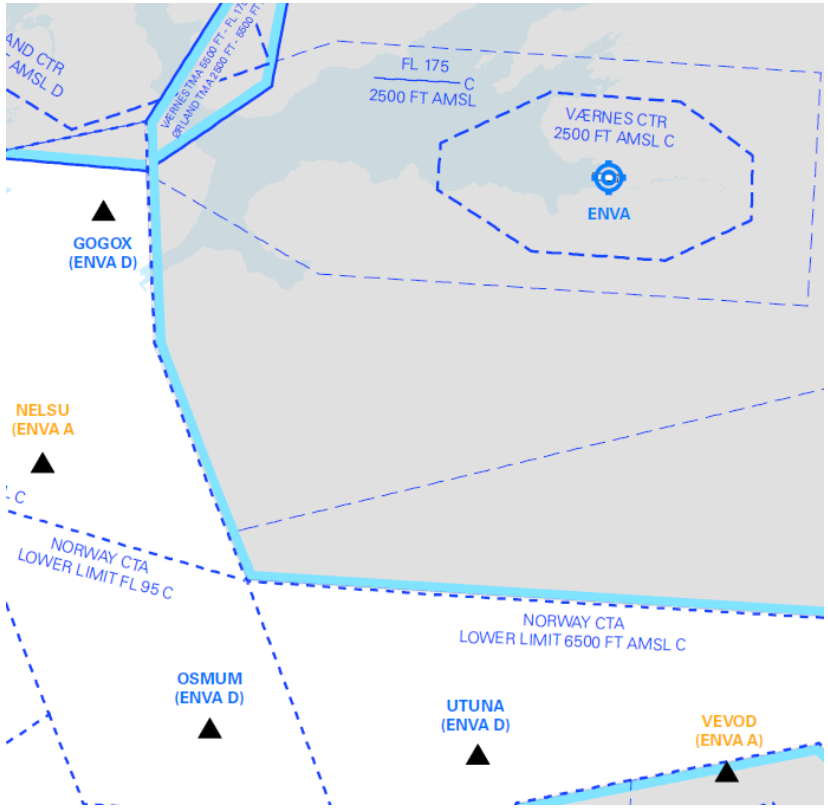
- *From a FRA Entry Point to a FRA Exit Point*
  - *Flight plan DCT or via one or several points (such a point can either be a NAVAID published in AIP ENR 4.1, a significant point published in ENR 4.4 or a Lat/Long coordinate)*



FRA entry for departing traffic

***Departing traffic** is allowed to flight plan DCT from a FRA Departure Connecting Point (D) regardless of altitude at this point. A FRA Departure Connecting Point can either be;*

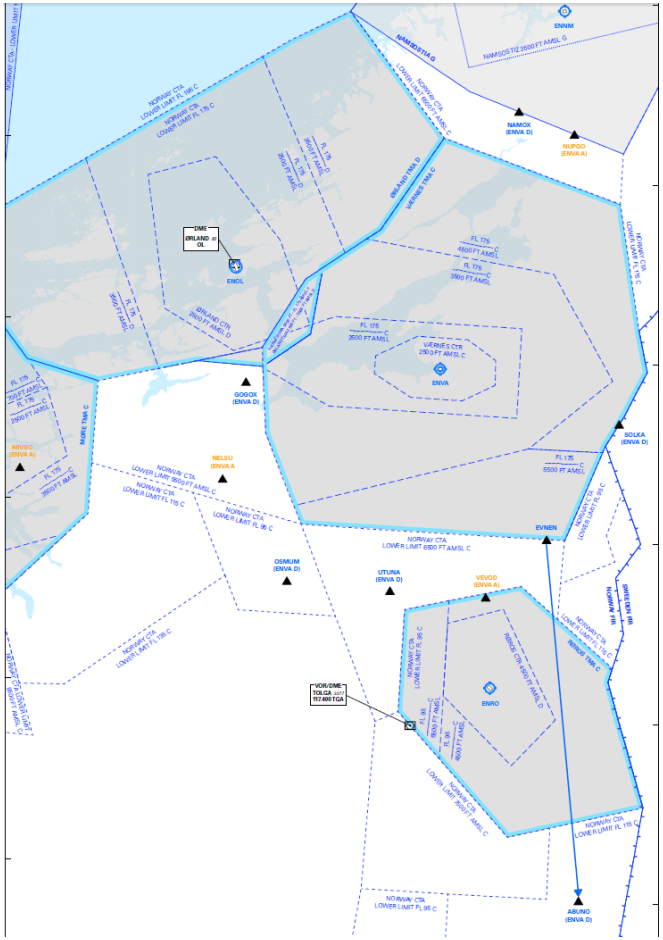
- *A SID Final Waypoint*
- *A specific connecting point linked to an aerodrome according to RAD, Appendix 5*
- *If required, the last point on a FRA Connecting Route as described in ENR 3.5*
- *If no suitable SID is available or there is no requirement for a connection point, a waypoint within a required distance from the aerodrome according to the RAD, Appendix 5.*



FRA exit for arriving traffic

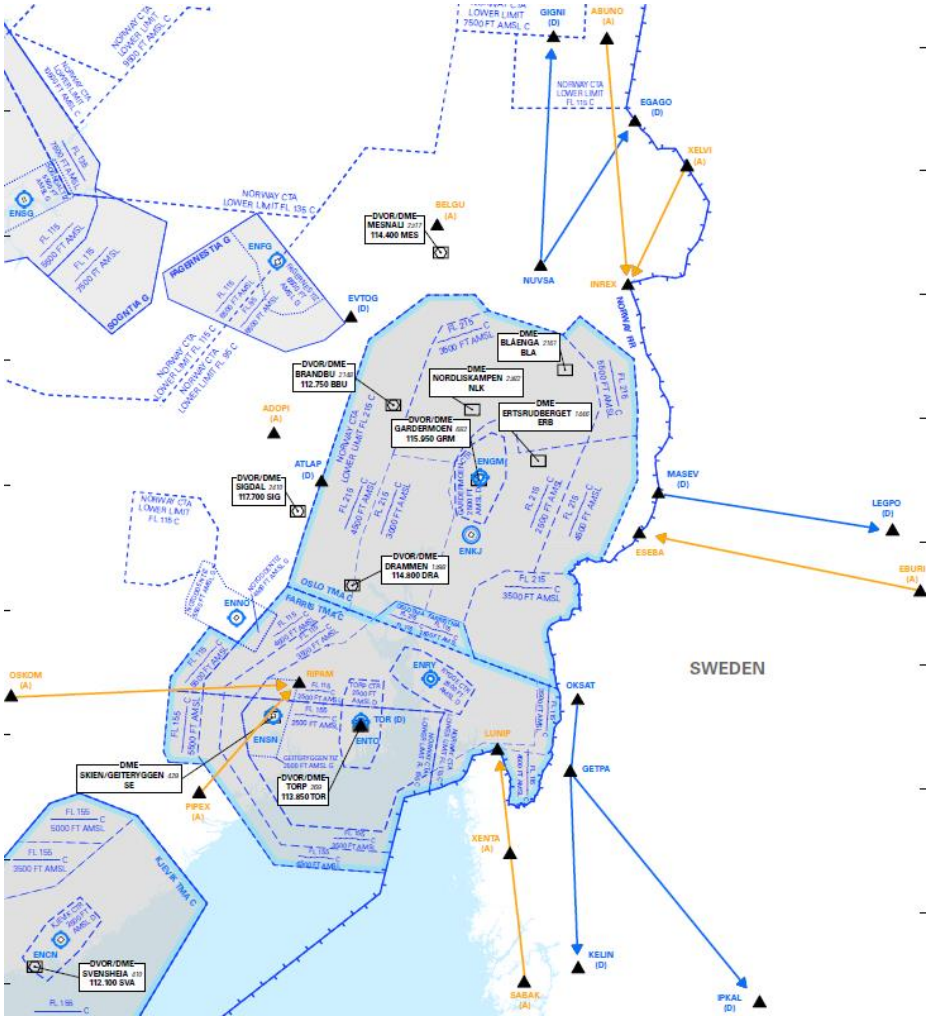
Arriving traffic *is allowed to flight plan DCT to a FRA Arrival Connecting Point <u>regardless of altitude at this point</u>. A FRA Arrival Connecting Point (A) can either be;*

- *A STAR Initial Waypoint;*
- *A specific connecting point linked to an aerodrome according to the RAD, Appendix 5;*
- *If required, the first point on a FRA Connecting Route as described in ENR 3.5;*
- *If no suitable STAR is available or there is no requirement for a connection point, a waypoint within a required distance from the aerodrome according to the RAD, Appendix 5.*



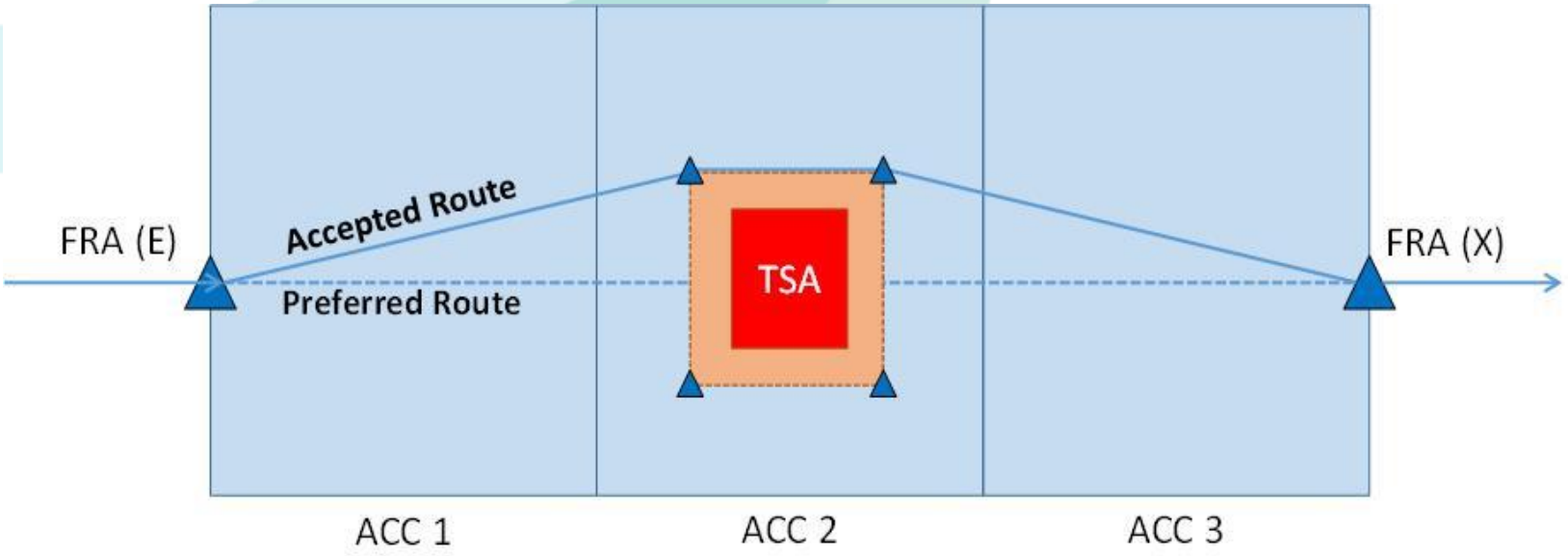
FRA Connecting Routes

FRA Connecting Routes (ATS-routes) are established for some airports in order to segregate traffic flows/reduce complexity.



Airspace Management (ASM)

When a booking is received for an AMC Manageable Area (AMA) the airspace is blocked by IFPS. Any trajectory filed through this airspace will be rejected and a revised flight plan avoiding the area will need to be submitted.



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ATM-system requirements

The following systems support is deemed as basic requirements to accommodate NEFRA operations:

*a) The ATM systems have to be able accept and process the NEFRA flight plans.**

b) NEFRA ACC`s shall be able to process and coordinate flights via OLDI. This coordination shall be based on the point where the planned DCT crosses the ACC boundary.

** This also means that the individual ATM-system must be capable of handling all FRA relevant points in NEFRA.*

Aircraft operators - flight planning capabilities

In order to take the full benefits of FRA AO`s need the flight planning capability, e.g.:

- advanced flight planning software

- access to relevant information

- human flight planning resources

Filing of flight plans can be a very complex task for AO`s. There are a number of factors to take into account and some of these factors can also change at a very late stage in the process, e.g. airspace availability, RWY in use.

In a cross-border FRA we can still expect to see FPLs wholly or partly via ATS-routes and «strange FPL`s» due to AO`s flight planning limitations or preferences.

In a FRA environment ATC`s role should be to try to fullfill the AO`s FPL, as this is supposed to reflect their user preferred routing. Tactical DCT`s should be minimised to avoid extra workload in upstream and downstream units.

Thank you for your attention.